

ABSTRACT

For

MONITORING OF SIGNAL WAVELENGTHS IN OPTICAL FIBRE

Individual wavelengths ($\lambda_1, \lambda_2, \lambda_3, \dots \lambda_N$) of a multicomponent light wave travelling in an optical fibre are monitored in such a way that e.g. a coupler is used to separate aside from the power of the light wave a small part, which is conducted into a narrowband tuneable optical filter. The filter tuning signal is used for controlling the filter in such a way that the wavelength window formed by its pass band will scan the entire wavelength range to be examined. The narrowband optical signal obtained from the filter is conducted to a light detector, which converts the optical signal into an electric signal. As the window of the tuneable filter scans through the wavelength band, such an electric signal is obtained as a wavelength function which is proportional to the power of the optical signal and the peak points of which are located at the wavelength of each channel. Based on the control signal and the peak points, the control electronics circuit determines the individual wavelengths of the multicomponent light wave.